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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,915	12/08/2000	Satoru Miyashita	101050.01	6866

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Oliff & Berridge PLC
P.O. Box 19928
Alexandria, VA 22320

EXAMINER

TARAZANO, DONALD LAWRENCE

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,915

Applicant(s)

MIYASHITA ET AL.

Examiner

D. Lawrence Tarazano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35, 36 and 39-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 35 is/are allowed.
- 6) ☒ Claim(s) 36 and 39-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 10/101,083.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 35, 36, and 39-45 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-49 of copending Application No. 10/101,083. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

3. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim electro-luminescent devices and methods of making such in which the EL material is laid down by ink-jet recording in which the same article is essentially produced.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 36, 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki et al. (5,895,692).

6. Shirasaki et al. teach electroluminescent devices (column 4, lines 35+). As shown in figure 1 below: The structure comprises a transparent substrate (11), transparent pixel electrodes (12), a luminescent layer (13) comprising a poly-N-vinylcabazole (PVCZ) matrix having color pixels (13a, b, c), which had been printed by ink jet or other means and then diffused, into the polymer matrix. The devices also have an electron injection layer (14) deposited over the luminescent layer and a second set of electrodes (15).

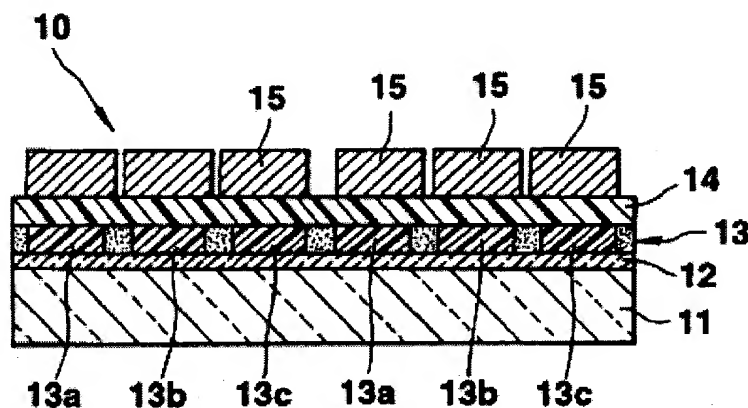
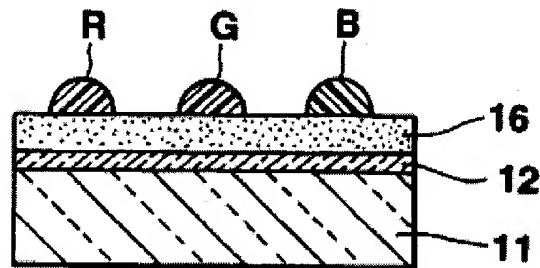
FIG.1

Figure 7B show the R (Red), G (Green) and B (Blue) pixels being formed on the surface of the luminescent hole transport layer (16), by a lithographic (coating) or ink jet method (column 7, lines 14+). These pixels represent discontinuous non-overlapping layers and meet the requirement that there are three colored layers

FIG.7B



These pixels have predetermined shape when printed, and this relates to the dot shape of the pixels in the final product. While a diffusion step occurs in the formation of the structures, this does not detract from the fact that the shape of the printed pixel is the shape of the pixel in the final product. Regarding claim 40, because the colored pixels do not overlap, they do not build on themselves. Each layer of colored pixels covers different areas of the substrate layer. Thus, the layers applied in any order would result in the same product. Once the droplets (figure 7b) diffuse they would spread and the boundaries of each of the droplets would come in contact with the adjoining droplets and touch as claimed.

Regarding the order of layers (14), dye layer and (13), hole transfer layer It would have been obvious to one having ordinary skill in the art to have changed the order of these two layers between the electrodes (15) and (12) because the device would still function in the same capacity. The device would generate light and electrons would move between the electrodes. There is no reason to believe that the device would function materially differently from what it does now in the prior art.

Since dyes work by electron excitement, an electron in the dye would be excited and then transfer to the matrix which functions as a hole material.

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As discussed above, Shirasaki et al. teach electroluminescent devices, but they are silent regarding the use of a protective layer on top of the electrodes (15). In the art of electronics, electrodes are generally fragile and prone to deterioration; therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have included a protective layer on top of the electrodes in the structures taught by Shirasaki et al. in order to produce a more robust structure.

Regarding the use of a controlling device to separately light the pixel electrodes: pixel electrodes are different colors so that they can be used for full color displays (column 9, lines 10+) Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used conventional controlling means to the pixel electrodes.

Response to Arguments

7. Applicant's arguments filed the 30th of January 2004 have been fully considered but they are not persuasive. The applicants argue that the "pixel luminescent layers physically contact each other" in contrast to the prior art. The examiner disagrees; the methods taught by Shirasaki involve the diffusion of the dye from the surface. The examiner takes the position that the diffusion would allow the pixels to fan out and touch each other. The applicants state that the pixels are separated and this allows the display to function in full color. The examiner feels that diffusion would not create as clearly defined lines as shown in the figures of 5,895,692. The greatest concentration of dye would be located over the pixel and allow for that pixel to fire a particular color. The examiner believes that diffusion would occur at the edge of the pixel and that there would be touching of the dyes as the fringe of the pixels (beyond the area where the electrodes exist). It is clear that diffusion occurs in the prior art. This is what allows the dye to enter in to

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the charge transfer layer. There is no reason to believe that diffusion only occurs down into the layer; the examiner believes that it would occur radially also. The examiner's concern is that the pictures in Shirasaki et al. only show the bulk morphology of the diffusion process, it does not take into account the leading edge of the diffusion front. While the picture shows a perfect cylinder for the diffused pixel, it is unclear how the material could go only in the vertical direction and not have an equal degree of horizontal diffusion.

8. While the examiner agrees that Shirasaki does not apply to the method claim 35, since claim 36 is directed to an article the differences in the processes do not appear to change the structure of the article. Regarding method claims 39-45, unlike claim 35, these claims do not require a blend in which the luminescent material functions both as a luminescent material and a carrier material. It appears that the simple dye material taught by Shirasaki would meet this limitation.

9. The application, in which a double patenting rejection is applied, is allowed. A terminal disclaimer is required before this application can be allowed. Once the copending application issues the above rejection will no longer be provisional.

10. All rejections based on 35 USC 112 are withdrawn in view of the applicants amendment / arguments.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Lawrence Tarazano whose telephone number is (571)-272-1515. The examiner can normally be reached on 8:30 to 6:00 (off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J Thibodeau can be reached on (571)-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Lawrence Tarazano
Primary Examiner

